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What is “the Benchmark Ratio” enabling BOJ’s three dimensional easing

- BOJ can reduce financial institutions' current account balance at the Bank, to which a negative rate is applied, by raising the Benchmark Ratio.
- Hence, impact of monetary base expansion and further lowering of negative interest rate can be controlled by raising the Benchmark Ratio.
- Effect of three dimensional easing (expansion of quantitative and qualitative monetary easing with a negative interest rate) can be technically controlled by adjusting the Benchmark Ratio.

BOJ can reduce financial institutions' current account balance at the Bank, to which a negative interest rate is applied, by raising the Benchmark Ratio

The Benchmark Ratio is a multiplier to the benchmark balance (BOJ’s average current account balance of the previous year). Zero interest rate out of three-tier system of BOJ’s current account balance (positive, zero and negative rates) is applied to the amount calculated by this formula (list of current account balance applicable of zero interest rate is shown in Diagram 1). In fact, current account balance applicable of negative interest rate can be reduced by increasing said account balance applicable of zero interest rate with the raise of the Benchmark Ratio. I would like to explain the mechanism as below.

Current account balance applicable of negative interest rate is calculated as below; “i) BOJ’s current account balance – ii) Current account balance applicable of positive interest rate – iii) Current account balance applicable of zero interest rate”. Current account balance applicable of negative interest rate will increase month by month as i) will increase every month by implementation of quantitative and qualitative easing, while ii) will stay almost unchanged. Therefore, it is possible to lower current account balance applicable of negative interest rate by raising the Benchmark Ratio and increasing iii).

"Diagram 1 : List of Reserves applicable of Zero Interest Rate"

(1) Benchmark Balances x Benchmark Ratio
(2) Outstanding amount of required reserves
(3) Balances of “Loan Support Program” and the “Funds-Supplying Operation to Support Financial Institutions in Disaster Areas”
(4) The amount outstanding of MRFs entrusted to institutions
(5) 2 times the amount of (3) increased by financial institutions

(Source) SMAM, based on materials of BOJ.

"Diagram 2: Breakdown of Current Account Balance"

(Unit: JPY trillion)

	Current Account Balance	Positive Int. Rate	Zero Int. Rate	Negative Int. Rate
City Banks	94.2	81.4	12.2	0.6
Regional Banks	17.9	14.9	2.7	0.3
Second Regional Banks	4.3	3.8	0.4	0.0
Foreign Banks	22.9	20.7	0.1	2.1
Trust Banks	28.3	15.4	2.9	10.0
Group "A" Financial Institutions	66.5	53.4	3.8	9.3
Group "B" Financial Institutions	20.0	18.9	0.3	0.9
(Brokerage Houses)	*5.6*	*5.6*	*0.0*	*0.0*
Total of reserves subject to Complementary Deposit Facility	254.1	208.6	22.4	23.1

(Note) 1. Average balance from 16th February, 2016 to 15th March 2016 (reserve maintenance period).
2. Group "A" Financial Institutions stands for those subject to reserve deposit requirement sytem and Group "B" Financial Institutions are those not subject the system.
(Source) SMAM, based on materials of BOJ.

Hence, impact of monetary base expansion and further lowering of negative interest rate can be controlled by raising the Benchmark Ratio

Now, let's think of how to increase current account balance applicable of zero interest rate through examples. Glancing at Diagram 1, we notice that item (2), outstanding amount of required amounts, will not change significantly as it is determined by deposit amount and item (3) and item (5) will not increase unless financial institutions make use of them. While, BOJ has no control over item (4), MRF, securities transaction settlement account for brokerage houses. However, for item (1), BOJ can raise the Benchmark Ratio at its own discretion. In fact, it decided to raise the Benchmark Ratio from previous 0% to 2.5% on 11th April, 2016.

Impact of this rise will be as follows. According to BOJ, their current account balance is about JPY 220 trillion and as long as the Benchmark Ratio remains as 0%, there will be no current account balance applicable of zero interest rate, based on the following formula of "benchmark balance × the Benchmark Ratio". Meanwhile, if the Benchmark Ratio is raised to 2.5%, amount applicable to zero interest rate will increase by about JPY 5.5 trillion (approx. JPY 220 trillion × 2.5%). Therefore, even if BOJ expands monetary base or lower negative interest rate in the future, impact to financial institutions can be controlled by raising the Benchmark Ratio.

Effect of three dimensional easing (expansion of quantitative and qualitative monetary easing with a negative interest rate) can be technically controlled by adjusting the Benchmark Ratio

I would like to show an example by a simple calculation. Let's assume that i) BOJ's current account balance is JPY 260 trillion, ii) the balance under positive interest rate is JPY 210 trillion and iii) the balance under zero interest rate is 40 trillion based on the Benchmark Ratio of 0%. Current account balance applicable of negative interest rate can be calculated as JPY 10 trillion, i.e. "i) JPY 260 trillion – ii) JPY 210 trillion – iii) JPY 40 trillion = JPY 10 trillion". Currently, BOJ's current account balance is increasing by 20 trillion in around 3 months. With this amount of increase, current account balance applicable of negative interest rate after 3 months will increase by JPY 30 trillion, i.e. "i) (JPY 260 trillion + JPY 20 trillion) – ii) JPY 210 trillion – iii) JPY 40 trillion =JPY 30 trillion".

Now, if the Benchmark Ratio is raised to 9.0%, BOJ's current account balance applicable of zero interest rate will increase by JPY 20 trillion (approx. JPY 220 trillion × 9.0%). Hence, current account balance applicable of negative interest rate after 3 months will be back to initial level of JPY10 trillion; "i) (JPY 260 trillion + JPY 20 trillion) – ii) JPY 210 trillion – iii) (JPY 40 trillion +

JPY 20 trillion) = JPY 10 trillion". In this way, it is possible to control the impact of expansion of quantitative and qualitative easing with a negative interest rate by adjusting the Benchmark Ratio. Meanwhile, BOJ has already decided to review the Benchmark Ratio on a quarterly basis and due to the hike on 11th April, current account balance applicable of negative interest rate is estimated to be in the range of about JPY 10-30 trillion during the April and May 2016 reserve maintenance periods.

*** Please note that this report is a translation of Japanese report written on 14th April, 2016.**